

200000180

THIE UNITED STATES OF AMERICA

TO ALL TO WHOM THESE PRESENTS SHALL COME;

Western Plant Breeders, Inc.

THE LESS THERE HAS BEEN PRESENTED TO THE

Secretary of Agriculture

AN APPLICATION REQUESTING A CERTIFICATE OF PROTECTION FOR AN ALLEGED DISTINCT VARIETY OF SEXUALLY REPRODUCED, OR TUBER PROPAGATED PLANT, THE NAME AND DESCRIPTION OF WHICH ARE CONTAINED IN THE APPLICATION AND EXHIBITS, A COPY OF WHICH IS HEREUNTO ANNEXED AND MADE A PART HEREOF, AND THE VARIOUS REQUIREMENTS OF LAW IN SUCH CASES MADE AND PROVIDED HAVE BEEN COMPLIED WITH, AND THE TITLE THERETO IS, FROM THE RECORDS OF THE PLANT VARIETY PROTECTION OFFICE, IN THE APPLICANT(S) INDICATED IN THE SAID COPY, AND WHEREAS, UPON DUE EXAMINATION MADE, THE SAID APPLICANT(S) IS (ARE) ADJUDGED TO BE ENTITLED TO A CERTIFICATE OF PLANT VARIETY PROTECTION UNDER THE LAW.

NOW, THEREPORE, THIS CERTIFICATE OF PLANT VARIETY PROTECTION IS TO GRANT UNTO THE SAID APPLICANT(S) AND THE SUCCESSORS, HEIRS OR ASSIGNS OF THE SAID APPLICANT(S) FOR THE TERM OF TWENTY YEARS FROM THE DATE OF THIS GRANT, SUBJECT TO THE PAYMENT OF THE REQUIRED FEES AND PERIODIC REPLENISHMENT OF VIABLE BASIC SEED OF THE VARIETY IN A PUBLIC REPOSITIORY AS PROVIDED BY LAW, THE IGHT TO EXCLUDE OTHERS FROM SELLING THE VARIETY, OR OFFERING IT FOR SALE, OR REPRODUCING IT, OR DELING IT, OR EXPORTING IT, OR CONDITIONING IT FOR PROPAGATION, OR STOCKING IT FOR ANY OF THE PURPOSE, OR USING IT IN PRODUCING A HYBRID OR DIFFERENT VARIETY THEREFROM, TO THE EXTENT ABY THE PLANT VARIETY PROTECTION ACT. (84 STAT. 1542, AS AMENDED, 7 U.S.C. 2321 ET SEQ.)

WHEAT, COMMON

'Pristine'

In Vestimony Therest, I have hereunto set my hand and caused the seal of the Plant Baristy Protection Office to be affixed at the City of Washington, D.C. this twenty-fourth day of April, in the year of our Lord two thousand one.

alank Post

Acting Commissioner Plant Variety Protection Office Agricultural Markoting Service of Agriculture

U.S. DEPARTMENT OF AGRICULTURE AGRICULTURAL MARKETING SERVICE SCIENCE AND TECHNOLOGY - PLANT VARIETY PROTECTION OFFICE

The following state ments are made in accordance with the Privacy Act of 1974 (S.U.S.C. 552a) and the Paperwork Reduction Act (PRA) of 1995.

APPLICATION FOR PLANT VARIETY PROTECTION CERTIFICATE (Instructions and information collection burden statement on reverse)

Application is required in order to determine if a plant variety protection certificate is to be issued (7 U.S.C. 2421). Information is held confidential until certificate is issued (7 U.S.C. 2426).

1 NAME OF OWNER			2. TEMPORARY DESIGNA EXPERIMENTAL NAME	TION OR	3. VARIETY NAME	
Western Plant Breeders, Inc.			BZ 991-408HW		Pristine	
4. ADDRESS (Street and No., or R.F.D. No., City, State, and ZIP Code, and Country)				5. TELEPHONE (include are		FOR OFFICIAL TUSE ONLY
8111 Timberline Drive Bozeman, MT 59718				(406) 587-1	218	PVPO NUMBER 2 0 0 0 0 1 8
					0.4.7	<u> </u>
	· · · · · · · · · · · · · · · · · · ·	- ₁	· · · · · · · · · · · · · · · · · · ·	(406) 586-8	247	FILING DATE
 IF THE OWNER NAMED IS NOT A "PERS ORGANIZATION (corporation, partnership 	ON", GIVE FORM OF , association, etc.)	8. IF INCOR STATE OF	PORATED, GIVE FINCORPORATION	9. DATE OF INCORPORATE	ON	3-9-2000
Corporation		Ari	Izona	Aug. 24, 1	990	O 1. COO
10. NAME AND ADDRESS OF OWNER REP	RESENTATIVE(S) TO SERVE IN TI	HIS APPLICATION	l. (First person listed will red	ceive all papers)		FILING AND EXAMINATION
Dr. Dale R. Cla Western Plant B 8111 Timberline Bozeman, MT 59	reeders, Inc.					FEES: \$ 2450.00 R DATE 3-9-2000 E CERTIFICATION FEED
						5320 DATE 4//6/0/
11. TELEPHONE (Include area code)	12. FAX (Include area code)	13	. E_MAIL		14. CROI	KIND (Common Name)
406-587-1218	406-586-8247		dclark@wes	tbred.com	wh	eat
15 GENUS AND SPECIES NAME OF CROP		16	. FAMILY NAME (Botanica	a/)	17. IS TH	E VARIETY A FIRST GENERATION
Triticum asetiv	um .	ļ	Poaceae		HYBR	□ YES 🙀 NO
18. CHECK APPROPRIATE BOX FOR EACH reverse) a. Exhibit A. Origin and Breeding I b. Exhibit B. Statement of Distinct	History of the Variety	w instructions on	CERTIFIEDS	WNER SPECIFY THAT SEED (SEED? See Section 83(a) of TES (If Yes", answer items 20 and 21 below)	the Plant Va	RIETY BE SOLD AS A CLASS OF riety Protection Act) NO (If "no," go to item 22)
c. Exhibit C. Objective Description	•	-	20. DOES THE OF	WNER SPECIFY THAT SEED (OF THIS VAF	RIETY BE LIMITED AS TO NUMBER
d. Exhibit D. Additional Description e. Exhibit E. Statement of the Besi		4	П м	ES ·		х і ио
repository)	ntreated seeds or, for tuber propaga I be deposited and maintained in ar 450), made payable to "Treasurer of Protection Office)	approved public		TEM 20, WHICH CLASSES OF DUNDATION REGIS		ON BEYOND BREEDER SEE07
22. HAS THE VARIETY (INCLUDING ANY HA FROM THIS VARIETY BEEN SOLD, DISPI	RVESTED MATERIAL) OR A HYBR OSED OF TRANSFERRED, OR US	ID PRODUCED	23. IS THE VARIE	TY OR ANY COMPONENT OF LIGHT (PLANT BREEDER'S RIC	THE VARIE	TY PROTECTED BY INTELLECTUAL
FROM THIS VARIETY BEEN SOLD, DISPOSED OF, TRANSFERRED, OR USED IN THE U. S. OR OTHER COUNTRIES? YES NO IF YES, YOU MUST PROVIDE THE DATE OF FIRST SALE, DISPOSITION, TRANSFER, OR USE FOR EACH COUNTRY AND THE CIRCUMSTANCES. (Please use space indicated on reverse.)			Y	ES SE GIVE COUNTRY, DATE OF NUMBER. (Please use space in	FILING OR I	NO SSUANCE AND ASSIGNED
24. The owners declare that a viable sample of for a luber propagated variety a lissue cutt. The undersigned owner(s) is(are) the owner and is entitled to protection under the providence(s) is(are) informed that false representations.	basic seed of the variety will be furn are will be deposited in a public report of this sexually reproduced or tube sions of Section 42 of the Plant Variety	nished with applic sitory and mainta or propagated plar ety Protection Act	ation and will be replenished and for the duration of the st variety, and believe(s) that	d upon request in accordance w certificate.	ith such regu	dations as may be applicable, or
SIGNATURE OF OWNER WILL ROUND			SIGNATURE OF C	DWNER Biggerst		5
NAME (Please print or type)				nt or type)		
Dale R. Clark	·		Dan R.	Biggerstaff	<u> </u>	
CAPACITY OR TITLE Barley & Wheat E	OATE Breeder Mark	8 #20c	CAPACITY OR THE	ne neral Manage	r	March 8, 2000
LT-470 (6-98) designed by the Plant Variety Pro	1-4-47					information collection burden statement)

"PRISTINE" Hard White Spring Wheat

16.a. Exhibit A. Origin and Breeding History

"Pristine" (Exp. # BZ 991-408) is a hard white spring wheat that originated from the cross of "Fergus x Golden 86, made near Phoenix, AZ in March 1990. The F1 plants were grown near Bozeman, MT during the summer of 1990 and the F2 seed harvested in September, 1990. The F2 seed was planted near Phoenix in Nov. 1990 and single F2 heads were harvested in late April 1991. F3 head rows were planted in May 1991 near Bozeman. Agronomically acceptable F3 rows were selected and this particular row was given the designation BZ 991-408. Protein and protein quality (the SDS sedimentation test) analysis for bread wheat type quality were conducted on selected lines prior to advancing to yield trials. Yield trials, along with quality analysis, were conducted on the F4 thru F10 generations in Western Plant Breeders' Pacific Northwest spring wheat trials. Pristine was also evaluated for disease resistance, plant height, lodging resistance, and various other agronomic characters (see Table 1.) and for end use quality (see Table 2.) as a hard spring wheat.

Heads were selected from the F7 generation in the fall of 1995 and planted near Yuma, AZ in November 1995. Uniform F8 rows were harvested individually (and washed with chlorox, etc. in compliance with the USDA/APHIS regulations for moving breeding material out of the Karnal bunt regulated area) and planted as line rows near Bozeman in May, 1996. Uniform line rows were harvested individually and tested for hard spring wheat quality. Each line row was again planted individually in May 1997. All lines were uniform in appearance and were bulk harvested in September 1997. The harvested seed was designated "Breeder's Seed" and was used to plant approximately 10 acres near Manhattan, MT in May 1998. This production was harvested in the fall of 1998 and designated "Foundation" seed. Foundation seed was planted in the spring of 1999 to produce Registered and Certified seed. Certified seed will be first available to growers in the spring of 2000.

"PRISTINE" Hard White Spring Wheat

A variant that is similar to "Pristine", but which is 4 to 8 inches taller, occurs at a frequency of up to .04% (4 per 10,000 plants). Also, a red seed variant occurs at the frequency of up to .08% (8 seed per 10,000 seed). Otherwise, "Pristine" is a stable and uniform variety in appearance and performance across several generations (F4 to F12) and growing conditions.

16. b. Exhibit B. Statement of Distinctness

Pristine is most similar to the variety Fergus. However, the seed color of Pristine is white, whereas the seed color of Fergus is red.

The above comparison, along with the complete Objective Description (Exhibit C) show Pristine to be a novel variety of hard white spring wheat.

Table 1. Agronomic characteristics of Pristine compared to check varieties in Western Plant Breeders' trials 1996 - 1999 (avg. of 15 locations).

<u>Entry</u>	Heading* Date <u>from 7/1</u>	Pft. Ht.	T.W. (lbs/bu)	Protein <u>%</u>	SED (mm)	4yr avg <u>bu/ac</u>
Pristine	3	35	62.5	13.7	124	101
Hank	2	34	60.1	13.6	123	105
Zeke	3	36	60.4	13.1	124	107
WestBred 936	3	32	59.7	13.9	129	101
Express	7	32	60.5	13.9	115	102



"PRISTINE" Hard White Spring Wheat

Table 2. Quality evaluations of Pristine compared to WestBred 936 in the Pacific Northwest Wheat Quality Council Collaborative Evaluation, 1999.

Evaluating Company								
			Mixing Tol.		Loaf	Bread		
Fisher Milling Co.	<u>Protein</u>	<u>Peak</u>	<u>Index</u>	Stability	<u>Volume</u>	<u>Score</u>	<u>Overall</u>	
Pristine	13.7	11.0	20	11.5	3100	92	excellent	
WestBred 936	14.2	12.0	15	15.0	3300	95	excellent	
			Falling		Mix. Tol.	Loaf		
Cargill Flour Milling	<u>Protein</u>	<u>Ash</u>	Number	Absorption	<u>Index</u>	<u>Volume</u>	Overall	
Pristine	14.1	0.41	474	62.1	10	1020	good	
WestBred 936	14.5	0.44	581	63.6	20	1100	good	
•								
•				Mixograph			Test Baking	
Mont. St. Univ.	<u>FI</u>	our		Mixing			Mixing	Loaf
Cereal Qual. Lab.	<u>Protein</u>	<u>Ash</u>	<u>Type</u>	<u>Time</u>	Absorption	Absorption	<u>Time</u>	<u>Volume</u>
Pristine	14.0	0.49	H3	3.5	64.1	73.7	5.7	1110
WestBred 936	14.4	0.45	H4	3.3	64.8	73.7	6.7	1225

According to the Paperwork Reduction Act of 1995, an agency may not conduct or sponsor, and a person is not required to respond to a collection of information unless it displays a valid OMB control number. The valid OMB control number for this collection of information is (0581-0055). The time required to complete this information collection is estimated to average 30 minutes per response, including the time for reviewing instructions, searching existing data

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U.S. DEPARTMENT OF AGRICULTURE AGRICULTURAL MARKETING SERVICE SCIENCE AND TECHNOLOGY PLANT VARIETY PROTECTION OFFICE BELTSVILLE, MD 20705

EXHIBIT C (Wheat)

OBJECTIVE DESCRIPTION OF VARIETY WHEAT (Triticum spp.)

NA	ME OF APPLICANT(S)			<u> </u>	T	-
	Western	Plant Breeders,	Inc	•	FOR OFFICIAL USE ONLY	000000
AD		D Na., City, State, and Zip Code)			PVPO NUMBER 2	U U U U I B (
	8111 Tim Bozeman,	berline Drive MT 59718			VARIETY NAME Pri	stine
:				·	TEMPORARY OR EXPERIME	NTAL DESIGNATION
a m may	inimum of 100 plants: be used to determine	STRUCTIONS CAREFULLY: P ox (e.g. 0 9 9 or 0 9) when Comparative data should be deten plant colors; designate system used us for your variety; lack of response	mined from varieties en	tered in the same trial. Royal l	I' character of this variety in ti Data for quantitative plant of Horticultural Society or any	ne boxes below. haracters should be based on recognized color standard
	KIND:					
:		1=Common	2=Durum	3=Club	4=Other	(SPECIFY):
2.	VERNALIZATI	ON:				· · · · · · · · · · · · · · · · · · ·
		1=Spring	2=Winter	3=Other (SI	PECIFY) :	
3.	COLEOPTILE A	NTHOCYANIN:				
		1=Absent	2=Present			
4. J	IUVENILE PLA	NT GROWTH:				
* 1	3	1=Prostrate	2=Semi-erect	3=Erect		
5. F	LANT COLOR	(boot stage);			······································	
•	3	1 = Yellow-Green	2 = Green	3 = Blue-Gree	en	
6. F	LAG LEAF (bo	ot stage):				
	2	1 = Erect	2 = Recurved	2	1 = Not Twisted	2 = Twisted
7. E	AR EMERGEN	CE:				
	00	Number of Days Earlie	•			*

8. ANTHER COLOR:		
1 = Yellow	2 = Purple	
9. PLANT HEIGHT (from soil to top of he	ad, excluding awns):	The state of the s
o 8 cm Taller Than_	West Bred 936	•
cm Shorter Than_	Ernest	*
		* Relative to a PVPO-Approved Commercial Variety Grown in the Same Tria
10. STEM:		
A. ANTHOCYANIN		D. INTERNODE (SPECIFY NUMBER)
I= Absent 2=Present		1 = Hollow 2=Semi-solid 3=Solid
B. WAXY BLOOM		E. PEDUNCLE
2=Present		2 1=Absent 2=Present
C. HAIRINESS (last internode of r	achis)	33 cm Length
2 1=Absent 2=Present		
11. HEAD (at Maturity):		
A. DENSITY		C. CURVATURE
1=Lax 2=Middens 3= Dense	e	1 = Erect 2 = Inclined 3 = Recurved
B. SHAPE		D. AWNEDNESS
1 = Tapering 2= Strap 3 = Clavate 4 = Other (S	PECIFY):	$\frac{1}{3} = \text{Awnless} \qquad 2 = \text{Apically Awnletted} $ $\frac{1}{3} = \text{Awnletted} \qquad 4 = \text{Awned}$
12. GLUMES (at Maturity):		
A. COLOR		C. BEAK
$\boxed{3} 1 = \text{White} \qquad 2 = \text{Tan}$		3 1 = Obtuse 2 = Acute
3 = Other (SPECIFY) : Rec	<u> </u>	3=Acuminate
B. SHOULDER		D. LENGTH
1 = Wanting 2 = Oblique 3 = Rounded 4 = Square 5 = Elevated 6 = Apiculat		1 = Short 2 = Medium (ca. 7mm) (ca. 8mm) 3 = Long (ca. 9mm)

12. GLUMES (at Maturity) Continued:	
E. WIDTH	
1 = Narrow (ca. 3mm) 2 = Medium (ca. 3.5mm) 3 = Wide (ca. 4mm)	
13. SEED:	
A. SHAPE	BRUSH
$\boxed{3} 1 = \text{Ovate} \qquad 2 = \text{Oval} \qquad 3 = \text{Elliptical} \qquad \boxed{2}$	1=Short 2=Medium 3=Long
	1 = Not Collared 2 = Collared
B. CHEEK D. C	CREASE
1=Rounded 2=Angular	1 = Width 60% or less of Kernel 2 = Width 80% or less of Kernel 3 = Width Nearly as Wide as Kernel
	1 = Depth 20% or less of Kernel 2 = Depth 35% or less of Kernel 3 = Depth 50% or less of Kernel
E. Color	HENOL REACTION (see instructions):
1=White 2= Amber 3= Red 4= OTHER (Specify)	1 = Ivory 2 = Fawn 3 = Light Brown 4 = Dark Brown 5 = Black
F. TEXTURE 1=Hard 2=Soft	
14. DISEASE: (0=Not Tested; 1=Susceptible; 2=Resistant;	3=Intermediate; 4=Tolerant)
PLEASE INDICATE THE SPECIFIC RA	CE OR STRAIN TESTED
Stem Rust (Puccinia graminis £. sp. tritici)	Leaf Rust (Puccinia recondita f. sp. tritici)
Stripe Rust (Puccinia striiformis)- Prevelant	Loose Smut (Ustilago tritici)
Tan Spot (Pyrenophora tritici-repentis)	Flag Smut (Urocystis agropyri)
Halo Spot (Selenophoma donacis)	Common Bunt (Tilletia tritici or T. laevis)
Septoria nodorum (Glume Blotch)	Dwarf Bunt (Tilletia controversa)
Septoria avenae (Speckled Leaf Disease)	Karnal Bunt (Tilletia indica)
Septoria tritici (Speckled Leaf Blotch)	Powdery Mildew (Erysiphe graminis f. sp. tritici)
Scab (Fusarium spp.)	"Snow Molds"

14.	Disease (Continued)	(0=Not Tested;	1=Susceptible;	2=Resistant;	3=Intermediate;	4=Tolerant)
		PLEASE IN	DICATE THE SP	ECIFIC RACE	OR STRAIN TEST	ED
	O "Black Point"	(Kernel Smudge)	[0	Common Bipolaris	Root Rot (Fusarium	m, Cochliobolus and
	Barley Yellow	Dwarf Virus (BYDV) <u> </u>	Rhizocto	nia Root Rot <i>(Rhizo</i>	ctonia solani)
	Soilborne Mosz	nic Virus (SBMV)	0	Black Ch	aff <i>(Xanthomonas c</i>	ampestris pv. translucens)
	O Wheat Yellow (Spindle Streak) Mos	aic Virus 🕜	Bacterial syringae)	Leaf Blight (Pseudo	omonas syringae pv.
	O Wheat Streak M	Mosaic Virus (WSM)	y) o	Other (S	PECIFY)	
******	Other (SPECII	FY)	0	Other (S	PECIFY)	
	Other (SPECIA	(Y)	0	Other (Sl	PECIFY)	
	Other (SPECIF	(Y)	0	Other (SI	PECIFY)	
15. I	NSECT: (0=Not Test	ed; 1=Susceptible;	2=Resistant;	3=Intermedi	ate; 4=Tolerant)	
		PLEASE S	PECIFY BIOTY	E (where need	ed)	
	Hessian Fly (Mo	ayetiola destructor)	0	Other (SI	PECIFY)	
	Stem Sawfly (Co	ephus spp.)	0	Other (SI	PECIFY)	
	Cereal Leaf Beer	lle <i>(Oulema melanop</i>	a) o	Other (SP	PECIFY)	
	Russian Aphid	(Diuraphis noxia	0	Other (SP	PECIFY)	
•	○ Greenbug (Schiz	zaphis graminum)	0	Other (SP	ECIFY)	
	Aphids		0	Other (SP	ECIFY)	

U.S. DEPARTMENT OF AGRICULTURE AGRICULTURAL MARKETING SERVICE	The following statements are made in accordance with the Privacy Act of 1974 (5 U.S.C. 552a) and the Paperwork Reduction Act (PRA) of 1995.				
EXHIBIT E STATEMENT OF THE BASIS OF OWNERSHIP	Application is required in order to determine if a plant variety protection certificate is to be issued (7 U.S.C. 2421). Information is held confidential until certificate is issued (7 U.S.C. 2426).				
1. NAME OF APPLICANT(S)	TEMPORARY DESIGNATION OR EXPERIMENTAL NUMBER				
Western Plant Breeders, Inc	BZ 991-408HW Pristine				
4. ADDRESS (Street and No., or R.F.D. No., City, State, and ZIP, and Country)	5. TELEPHONE (include area code) 6. FAX (include area code)				
8111 Timberline Drive Bozeman, MT. 59718	406-587-1218 406-586-8247 7. PVPO NUMBER				
	20000180				
8. Does the applicant own all rights to the variety? Mark an "X" in appropri	iale block. If no, please explain. YES NO				
9. Is the applicant (individual or company) a U.S. national or U.S. based or	Ompany? YES NO				
If no, give name of country 10. Is the applicant the original owner? YES N	(O If no, please answer one of the following:				
b. If original rights to variety were owned by a company(ies), is(are) the	IO If no, give name of country original owner(s) a U.S. based company? If no, give name of country				
PLEASE NOTE:					
Plant variety protection can be afforded only to owners (not licensees) who meet on	e of the following criteria:				
 If the rights to the variety are owned by the original breeder, that person must be which affords similar protection to nationals of the U.S. for the same genus and 	a U.S. national, national of a UPOV member country, or national of a country species.				
If the rights to the variety are owned by the company which employed the origin member country, or owned by nationals of a country which affords similar prote-	ction to nationals of the U.S. for the same genus and species.				
If the applicant is an owner who is not the original owner, both the original owner.					
The original breeder/owner may be the individual or company who directed final br	eeding. See Section 41(a)(2) of the Plant Variety Protection Act for definition.				
According to the Paperwork Reduction Act of 1995, no persons are required to respond to a collect this information collection is 0581-0055. The time required to compete this information collecti searching existing data sources, gathering and maintaining the data needed, and completing and r	ction of information unless it displays a valid OMB control number. The valid OMB control number for on is estimated to average 10 minutes per response, including the time for reviewing instructions, eviewing the collection of information.				
	race, color, national origin, sex, religion, age, disability, political beliefs, and marital or familial status. means for communication of program information (braille, large print, audiotape, etc.) should contact				
To file a complaint, write the Secretary of Agriculture, U.S. Department of Agriculture, Washingtoners opportunity employer.	ngton, D.C. 20250, or call 1-800-245-6340 (voice) or (202) 720-1127 (TDD). USDA is an equal				

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